

U.S. Patent Application Serial No. 09/939,716  
Amendment filed March 12, 2007  
Reply to OA dated December 11, 2006

**REMARKS**

Claims 1-19 are currently pending, of which claims 1, 7, 9, 10, 13, and 16-19 have been amended herein.

Claims 20-23 have been canceled herein without prejudice or disclaimer as to their subject matter.

I. The Examiner has objected to the drawings, and has suggested that the drawings do not currently show every feature of the invention specified in the claims.

Applicants respectfully traverse this rejection, for the following reasons.

Claim 1 has been amended herein to further clarify the claimed invention.

Applicants respectfully submit that this objection to the drawings should be withdrawn.

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II. The Examiner has rejected claims 1-6, 8/6/5/1, 9/6/5/1, 10, 13, 14/9/6/5/1, 15/9/6/5/1, and 16-18 under the first paragraph of 35 USC 112 as failing to comply with the written description requirement.

Applicants respectfully traverse this rejection, for the following reasons.

Claims 1, 10, 13, and 16-18 have been amended herein to further clarify to claimed invention.

Applicants respectfully submit that this rejection under the first paragraph of 35 USC 112 should be withdrawn.

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III. The Examiner has rejected claims 1-5 under 35 USC 103(a) as obvious over USP 5,543,952 (hereinafter **Yonenaga '952**).

Applicants respectfully traverse this rejection, for the following reasons.

The Examiner has modified the previous rejection of claims 1-5. The Examiner is now taking "official notice" regarding placement of an amplifier.

Now, in the rejection of claim 1, the Examiner is relying on a combination of "official notice" and what allegedly would have been obvious. Applicants respectfully challenge the Examiner's statement that "it would have been obvious" to arrange amplifier and other features as set forth in claim 1, and also challenge the Examiner's taking of official notice regarding the amplifier.

The Examiner has stated the following: "**Yonenaga** [**'952**] does not disclose expressly ... said bandwidth restriction means locates between an output of said amplifier and an input of said electrical-optical conversion means" (Office Action, page 5).

In an attempt to remedy the above issues regarding **Yonenaga '952**, the Examiner has asserted the following: "Examiner takes official notice that it is common and well known to place an amplifier along a transmission medium in order to restore signal strength.... [I]t would have been

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obvious to put amplifiers along any points of a transmission system or medium" (Office Action, page 5).

It would not have been obvious to arrange an amplifier and other features as set forth in claim 1, for the following reasons. According to the prior art (Figure 21), an amplifier was placed at the input terminal of modulator 110 to help ensure an adequate signal at the input terminal of modulator 110. Presuming that the signal at the input terminal of modulator 110 is critically important, the Examiner has not explained what would motivate someone to move the amplifier further away from that input terminal. Thus, such a modification is not obvious and this rejection of claim 1 should be withdrawn.

Applicants respectfully traverse the Examiner's taking of official notice, for the following reasons. The Examiner's taking of official notice is not properly officially noticed and/or not properly based upon common knowledge.

The prior art (see one or more of Figures 21-25) has problems including an inter-symbol interference problem as discussed in the subject application from page 6, line 14 through to page 7, line 20. The prior art shown in Figure 21 depicts an amplifier 102-1 between an output of a filter 100-1 and an input of a modulator 110.

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According to the principles set forth in the subject application, the placement of features as set forth in claim 1 serves to help avoid the inter-symbol interference problem (see page 8, lines 18-26).

Applicants do not consider it to be common knowledge, or well-known in the pertinent art, to arrange the amplifier and other features as set forth in claim 1 of the subject application. The Examiner's taking of official notice and reliance thereupon are believed to be improper, for at least the following reasons.

Firstly, Applicants placed the components as set forth in claim 1 which served to help avoid the inter-symbol interference problem (see page 8, lines 18-26). The Examiner has not provided any "prior art" explicitly demonstrating that anyone else arranged components as set forth in claim 1 and thereby avoided the inter-symbol interference problem.

Thus, there is a huge gap between the prior teachings and the features set forth in claim 1. It is improper for the Examiner to overcome this huge gap in the art by merely taking "official notice" without providing adequate support. Accordingly, the Examiner's assertion is not properly officially noticed and/or not properly based upon common knowledge.

Secondly, the Examiner has not provided the required specific factual findings predicated on

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sound technical and scientific reasoning to support the Examiner's conclusion of common knowledge.

Thirdly, the Examiner has not provided the required affidavit setting forth specific factual statements and explanation to support the finding, where the Examiner is relying on personal knowledge to support the finding of what is known in the art (see 37 CFR 1.104(d)(2)), and also the Examiner has not provided adequate documentary evidence.

In view of the above, Applicants respectfully submit that this rejection of claim 1 should be withdrawn. The rejection of claims 2-5 should be withdrawn by virtue of their dependency.

IV. The Examiner has rejected claims 6, 7, 9, 14, 15, 17, 18, 20, and 21 under 35 USC 103(a) as obvious over **Yonenaga '952** in view of USP 5,644,664 (hereinafter **Burns '664**).

Applicants respectfully traverse this rejection, for the following reasons.

*Regarding claims 6, 9/6/5/1, 14/9/6/5/1, 15/9/6/5/1, 17/9/6/5/1, and 18/9/6/5/1:*

In view of the above discussion of claim 1 regarding an amplifier and other features, the Examiner has not demonstrated how **Burns '664** could remedy any deficiencies of **Yonenaga '952** regarding the amplifier and/or other features. Accordingly, this rejection of claims 6, 9/6/5/1,

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14/9/6/5/1, 15/9/6/5/1, 17/9/6/5/1, and 18/9/6/5/1 should be withdrawn by virtue of their dependency.

*Regarding claims 7, 8/7, 9/7, 14/9/7, 15/9/7, 17/9/7, and 18/9/7:*

The Examiner has stated that "**Yonenaga** ['952] does not disclose expressly having an amplifier for amplifying an input signal applied to the input terminal ..." (Office Action, page 8).

In an attempt to remedy the above issues regarding **Yonenaga** '952, the Examiner has asserted the following: "Examiner takes official notice that it is common and well known to place an amplifier along a transmission medium in order to restore signal strength" (Office Action, page 8).

Applicants respectfully traverse the Examiner's taking of official notice, for the following reasons. The Examiner's taking of official notice is not properly officially noticed and/or not properly based upon common knowledge.

The prior art (see one or more of Figures 21-25) has problems including an *inter-symbol interference problem* as discussed in the subject application from page 6, line 14 through to page 7, line 20. The prior art shown in Figure 21 depicts an amplifier 102-1 between an output of a filter 100-1 and an input of a modulator 110.

An amplifier and other features as set forth in claim 7 serve to help avoid the inter-symbol interference problem.

Applicants do not consider it to be common knowledge, or well-known in the pertinent art, to arrange features as set forth in claim 7. The Examiner's taking of official notice and reliance thereupon are believed to be improper, for at least the following reasons.

Firstly, Applicants arranged components as set forth in claim 7, which serves to help avoid the inter-symbol interference problem. The Examiner has not provided any "prior art" explicitly demonstrating that anyone else arranged components as set forth in claim 7 and thereby avoided the inter-symbol interference problem.

Thus, there is a huge gap between the prior teachings and the features set forth in claim 7. It is improper for the Examiner to overcome this huge gap in the art by merely taking "official notice" without providing adequate support. Accordingly, the Examiner's assertion is not properly officially noticed and/or not properly based upon common knowledge.

Secondly, the Examiner has not provided the required specific factual findings predicated on sound technical and scientific reasoning to support the Examiner's conclusion of common knowledge. Thirdly, the Examiner has not provided the required affidavit setting forth specific



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factual statements and explanation to support the finding, where the Examiner is relying on personal knowledge to support the finding of what is known in the art, and also the Examiner has not provided adequate documentary evidence.

In view of the above, Applicants respectfully submit that the rejection of claim 7 should be withdrawn. The rejection of claims 8/7, 9/7, 14/9/7, 15/9/7, 17/9/7, and 18/9/7 should be withdrawn by virtue of their dependency.

The rejection of claims 20 and 21 is moot and should be withdrawn, because claims 20 and 21 were canceled without prejudice or disclaimer as to their subject matter.

V. The Examiner has rejected claims 8, 10, 11, 12, and 22 under 35 USC 103(a) as obvious over **Yonenaga '952** in view of **Burns '664** and this document by Haeyang Chung: "Modeling and Optimization of Traveling-Wave LiNbO<sub>3</sub> Interferometric Modulators," IEEE Journal of Quantum Electronics, Vol. 27, No. 3, March 1991, pp. 608-617 (hereinafter **Chung**).

Applicants respectfully traverse this rejection, for the following reasons.

In view of the above discussion of claims 1 and 7 regarding an amplifier and other features, the Examiner has not demonstrated how **Burns '664** and **Chung**, alone or in combination, could

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remedy any deficiencies of **Yonenaga '952** regarding an amplifier and other features. Accordingly, Applicants respectfully submit that this rejection of claims 8 and 10-12 should be withdrawn by virtue of their dependency.

The rejection of claim 22 is moot and should be withdrawn, because claim 22 has been canceled without prejudice or disclaimer as to its subject matter.

VI. The Examiner has rejected claims 8, 10, 11, and 22 under 35 USC 103(a) as obvious over **Yonenaga '952** in view of **Burns '664** and Applicants' statements on pages 14-16 in the Reply filed May 8, 2006 (hereinafter "**Applicants' statements**").

Applicants respectfully traverse this rejection, for the following reasons.

In view of the above discussion of claims 1 and 7 regarding an amplifier and other features, the Examiner has not demonstrated how **Burns '664** and **Applicants' statements**, alone or in combination, could remedy any deficiencies of **Yonenaga '952** regarding an amplifier and other features. Accordingly, Applicants respectfully submit that this rejection of claims 8, 10, and 11 should be withdrawn by virtue of their dependency.

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The rejection of claim 22 is moot and should be withdrawn, because claim 22 has been canceled without prejudice or disclaimer as to its subject matter.

When the subject application was filed, an abstract was included on page 1 of the specification. The abstract is hereby removed from page 1 of the specification, because a separate abstract has been filed.

In view of the aforementioned amendments and accompanying remarks, all claims currently being considered are in condition for examination.

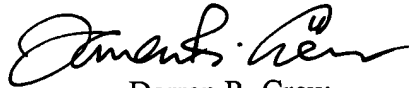
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due now or in the future with respect to this application, to Deposit Account No. 01-2340.

Respectfully submitted,

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